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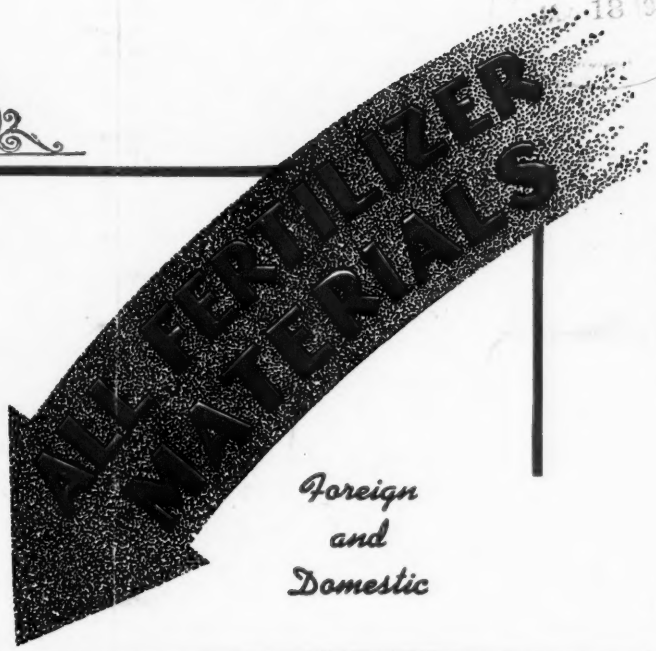

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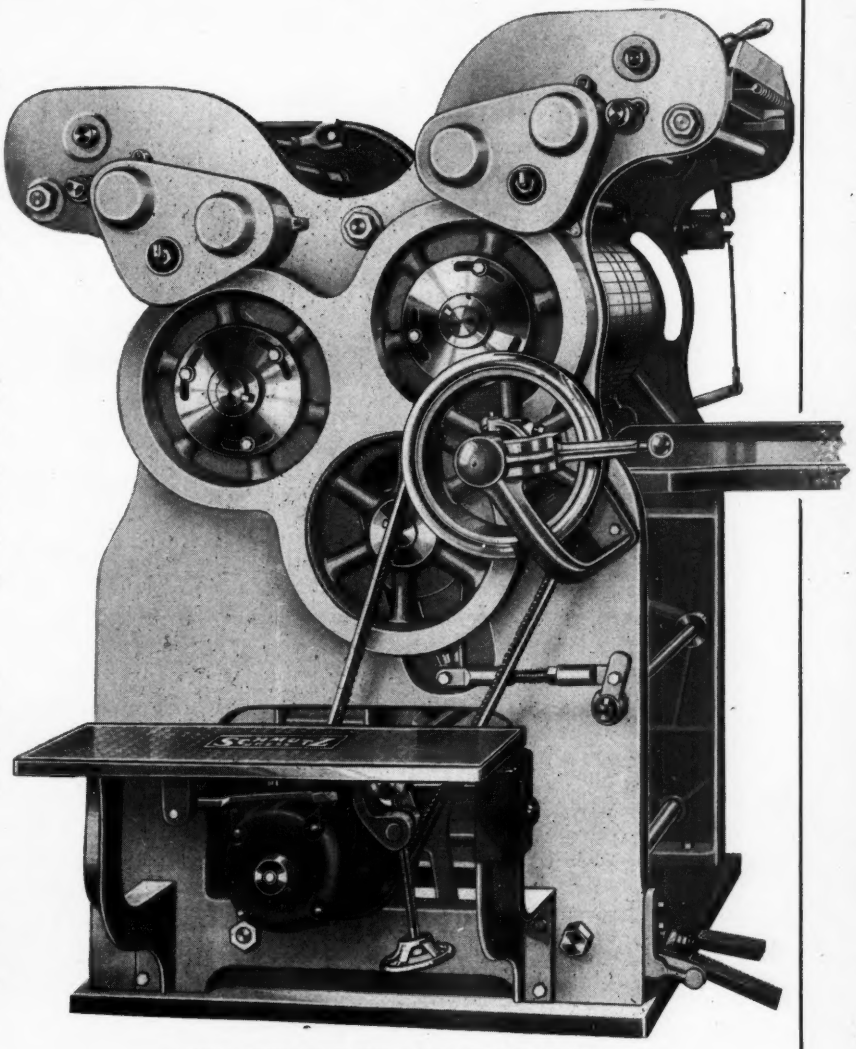

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See page 29

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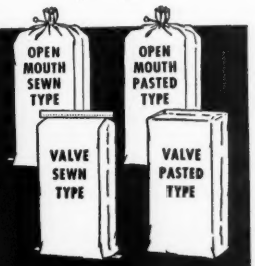

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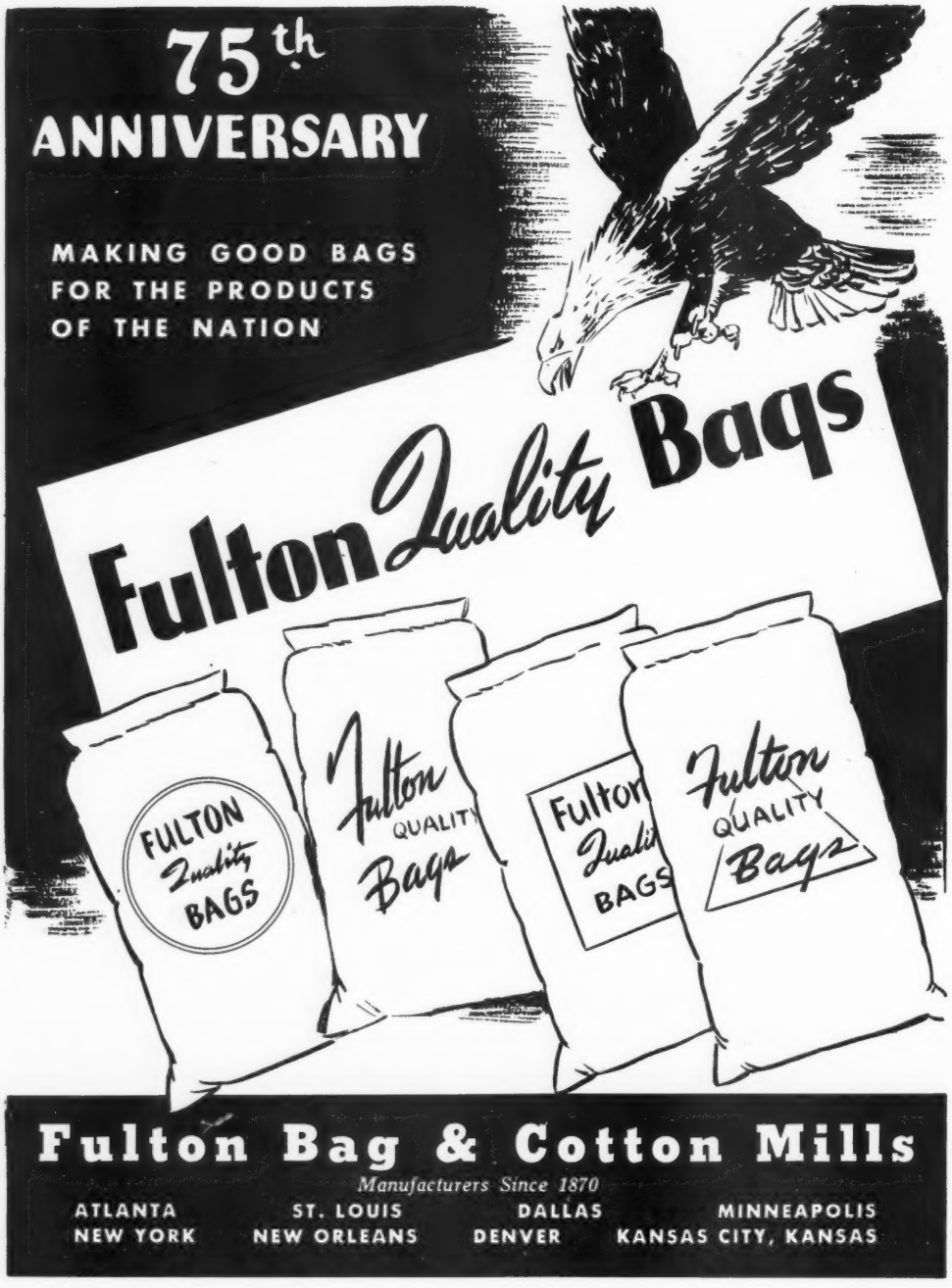
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"That man is a benefactor to his race who makes two blades of grass to grow where but one grew before."

Vol. 103 DECEMBER 29, 1945 No. 13

Using Public Relations for Leadership*

By EDWIN F. DAKIN
of Hill and Knowlton

I HAVE been asked to tell you something about public relations, and the job it has to do in today's world. Perhaps one trouble with our subject is that not all agree on what public relations means. I know a father who told his young son that French fried potatoes, however crisp, must *always* be eaten with the fork and never with the fingers. The boy naturally asked why. The father had a quick out. "Because it's good public relations," he said.

The father was right, I think, even though his son may not have felt enlightened. An important goal of public relations is to make the desirable impression on people. Pleasing people with good manners is certainly one of the techniques.

In today's complex society, everything we get comes to us through other people. One price we pay for our living includes constant effort to live up to majority ideas of what is right and proper.

Once upon a time that wasn't true. In Daniel Boone's day a man could build his house by chopping his own trees unaided, could support his family with his own gun and plow. Nowadays you have to secure the cooperation of untold people even before you can wash your teeth with somebody's toothpaste laid out on somebody's toothbrush.

One of the first things we start teaching our children, if we are good parents, is how to make right impressions on the community so that—as the saying goes—they can get ahead in the world. In a way, that job of making the right impressions sums up all there is to public relations—whether you are a child or a business man, a politician or a corporation.

I hope this explains why public relations means more than a fancy name for publicity. Publicity is only one of many tools we use to advance our public relations in a complex society. A piece about your daughter's activities in the society columns may possibly get her the husband she seeks, by affecting his opinion of her. But the chances are that she has long used a number of other influential devices such as personal charm, and good manners, and no doubt some rouge. She also studied the likes and the dislikes of the young man she has her eye on, and tries to adapt herself to his prejudices, if any. If she hasn't done this, the piece in the paper won't help much.

Study of what people want, so that you can adjust your own role to their wishes and ideals, is a very important public relations undertaking. Such study is nowadays conducted on a large scale in this country, as in the opinion polls you are familiar with. Almost all Government agencies, and many great corporations, scan such polls carefully, then try to adjust their policies accordingly. The opinions reported are sometimes less important than the attitudes revealed.

These polls are a technique that aids us in gauging the drift of public sentiment. But they add nothing new to public relations as a principle of action. The principle itself is older than Methusaleh. Here it is: *In order to get ahead in life, we must either adjust ourselves to our environment, or adjust the environment to us.*

*An address before the Fall Meeting of the National Fertilizer Association, Atlanta, November 14, 1945.

Today a complex society forms the environment we live in. We live through and by people. In whatever we achieve, we must either adjust our action and thinking to theirs, or adjust their ideas and action to our own. In practice, we follow both courses simultaneously, all our lives. Successful public relations consists of doing both things.

Policy Making

Public relations in business starts with policy making, because that is the place where enterprise either adjusts its course to the prevailing winds of public opinion—or fails to make the adjustment.

In recent years many business men have complained about the great power won by politicians. They wring their hands over this. Let us realize that politicians win power because they know how to win votes. Business men often think of themselves as engaged only in earning dollars. The fact is they are winning or alienating votes every day of their lives.

The public, of course, votes for or against you regularly at the ballot box of the market place. But it is not sufficient to give the consumer good merchandise at a price that suits him—not if you follow other policies that rile him. Then he may go to the polls and vote to put you in a strait jacket of regulation. Or he may vote to put the Government in business competition against you. The general public votes for or against industry at every election.

Unfortunately, the politicians often win over business because they sometimes sense more accurately than business men what the public really wants—then promise to deliver. We are in a day when people in this country take the production of merchandise for granted. Miracles of production techniques are old stuff to them. The politicians know that the public is primarily concerned now with other problems. How production can be more widely distributed is today's greatest problem of all. For instance, all today's controversy over increasing wage rates, job security, the annual wage, full employment—all goes straight back to demand for ways to get wider distribution or larger shares of things we know how to make in such abundance.

I suspect that if more business men realized they are competing directly with politicians, many of them would pay much more attention to the importance of public relations work.

The time is here when one of the most important tests of management capacity is the understanding of, and the ability to handle with success, the human side of the business—both in public relations and industrial relations.

Public relations is a function of top management. Management can get expert advice, professional help, but it cannot delegate the public relations *function*. That is because public relations is too closely bound up with policy. Certainly some individuals skilled in public relations should sit in the policy-making council of every corporation. Policy decisions should be weighed from the standpoint of public relations just as they are weighed from the standpoint of law. Sound public relations can only be based on the broadest possible concept of the public welfare.

When business leadership is sure that it follows such a policy, the next public relations job is to make sure the news about it reaches the public through all possible channels.

This flow of news is not intended primarily to publicize merchandise. Its chief result, if well handled, will be to create and maintain a *climate* of public understanding in which you can operate successfully.

For instance: One important object of the news we issue in various forms about the work of the National Fertilizer Association is to create exactly this public understanding of this group's objectives. Our news has a purpose broader than the direct promotion of fertilizer sales. Its first objective is to show people how the industry serves the public interest in all its operations. If we prove that point successfully, the sales problem lends itself to a comparatively simple attack.

Saint Paul said in his first letter to the Corinthians, "Let no man seek his own, but every man another's wealth." In other words, we prosper best by thinking first of ways to prosper others.

There is no sounder public relations policy than this. It is practical horse sense. To guide business policy by constantly asking how it benefits the whole community is the one sure way to make friends for business, and influence people.

Persuasion and Its Use

Now, of course, a time can always come in any enterprise, and any industry, when even the very best of policies face political challenge. You have seen this yourself recently in your own industry, in the shape of a political effort to put the Government in competition with you. The idea proposed is not only free

fertilizer for selected farmers, but Government operation of certain plants.

Many industries have faced similar problems in recent years. And all of them throw a special kind of burden on public relations. It is one thing to let the world know about your good works, when your audience is passively receptive. It is another to face an organized campaign which you must oppose with every resource of persuasion in your power.

The first job when enterprise faces such an attack is to make 100 per cent certain that its policy *is* operating 100 per cent in the public interest. The task is then to marshall public opinion in support of this policy by using every appeal that can be devised.

Business leadership is frequently under obvious disadvantages in such a campaign. For one thing, the opposition often has a large political following; for another, it is often easier to persuade restless people to change things than it is to argue convincingly for the *status quo*.

Recent history should have convinced all business leadership of one fact: all economic enterprise lives under an unwritten permit. *The people can modify the permit at any time they are dissatisfied with its performance.* In the immediate pre-war years we saw the people rise to regulate the banks, the utilities, the brokers, the stock exchange, and all labor policies. We have seen the war used as an occasion to regulate prices, profits, wages, and even the flow of raw materials and of consumer credits.

Clearly, public relations does not command an art of persuasion potent enough to turn back such movements if they are already national tides. If public opinion rises until it becomes a great wave, you cannot tell it, like King Canute, to roll back. When public opinion has become a tidal wave, even the most eloquent persuasion will hardly work. You must move, or you'll be drowned.

In the early part of the Roosevelt administration, for instance, public opinion polls indicated that a great many people had become embittered over the operations of a few public utilities. These few companies had earlier faced a possible choice of action. Either they could have changed their policies to meet developing opinion; or they could stand firm, and hope to ride the storm. They decided to stand firm, and try to persuade the public that their policies were sound and needed no basic alteration. That is, they decided, in the main, to fight for their *status quo*, by making gigantic efforts at persuasion. The effort failed. You know the outcome. A so-called death sentence was passed on certain holding companies.

I give you this instance of a persuasion campaign that failed, because it illustrates how even most eloquent persuasion depends on proper timing and regard for the public's concept of its welfare.

Of course, if you have a goal to accomplish and have no vital opposition, then persuasion is a wonderfully simple tool to use. It is usually no heroic task, for instance, to organize a campaign persuading people to support a cause like the Infantile Paralysis Fund, or the metal scrap campaign of wartime. You will, of course, have human lethargy to overcome, but if you have enough eloquence, imagination, and knowledge of people, you'll ordinarily win your campaign.

Persuasion against organized opposition—especially persuasion to defend a *status quo* in policy when many people demand change—is a far more difficult undertaking. I have mentioned the need for a sense of timing. Speed in taking remedial action is very necessary when public opinion starts moving against you. You may think the hostile opinion is based on false understanding of issues. We must always remember it is not truth, but what people believe to be truth, that guides human action and makes history.

If a corporation has really made a mistake that threatens its reputation, then swift and honest confession is one of the most persuasive remedies it can adopt. It is the same method recommended to sinners in our early Puritan communities: to confess the sin, and embrace honest declaration of reform.

I could cite you many interesting examples of great success in the use of persuasion, based on making a timely change in policy which was then "sold" to the public. During the thirties, for instance, the automobile companies came under attack because of their contracts with their dealers. The dealers were a group that lent itself to ready organization. Efforts were made to put some regulatory legislation through Congress. What happened? The companies under attack immediately rewrote their dealer policies in persuasive language any dealer could understand. And then they conducted a wise public relations campaign to explain and justify this new contract to all who were interested. Regulatory legislation of an inconvenient kind was doubtless avoided.

One point is worth noting: Campaigns of persuasion that succeed like this seldom make interesting history, because one cannot pos-

(Continued on page 28)

Chemical Analyses of Southern Grown Tomato Plants

By JACKSON B. HESTER*

IT IS a foregone conclusion that sunshine, water, and favorable temperatures are necessary for plant growth. In connection with this, perhaps no other factor influences plant growth more than desirable nutrition. Since little can be done about the amount of water and sunshine, every effort must be made to control, in so far as is possible, the availability of the nutrients in the soil. For example, excessive nitrogen tends to make plants vegetative and soft and, to a certain extent, the amount of nitrogen available to the plant may be controlled. So, if one had proper control of the nutrients in the soil, almost any desired type of plant could be produced (See Fig. 1). For this reason a knowledge of the chemical composition of plants is desirable.

During the plant season of 1945 some 45 different plant samples were obtained and analyses made for certain constituents shown in Table I. These plants were largely the size and age for shipment.

The mean composition represents samples of all degrees of hardness and is probably fairly representative of all the plants shipped during 1945. The mean composition of soft plants represents plants termed vegetative, brittle, and undesirable for setting in the field. The analyses indicate more water, less dry matter, more nitrate and total nitrogen, and phosphorus in comparison to the average plants. The hard and very hard plants are low in total and nitrate nitrogen and soluble phosphorus. They are also much lower in total phosphorus and this, no doubt, was a contributing factor in slowing the growth of the plant. During the plant season of 1945 water was abundant and the nature of these plants was largely controlled by nutrition.

With the exception of those years when moisture and temperature are favorable for plant growth, the quality of the plants will have to be controlled largely by nutrition. From that standpoint, it is probably desirable to select a plant composition that is representative of what is desired and work toward that goal. The figures under "probable satisfactory composition" represent what appears to be a plant of good composition.

The nitrate nitrogen and soluble phosphorus determined in the stems are probably those entering the plant and have not been utilized in the formation of plant substances. When plants have no nitrate nitrogen or soluble phosphorus in the stems, they are more or less dormant and fail to start growing quickly when set in the field. The necessary nutrients to make new cell structure are not present.

* Soil Technologist, Campbell Soup Company, Riverton, N. J.

TABLE I

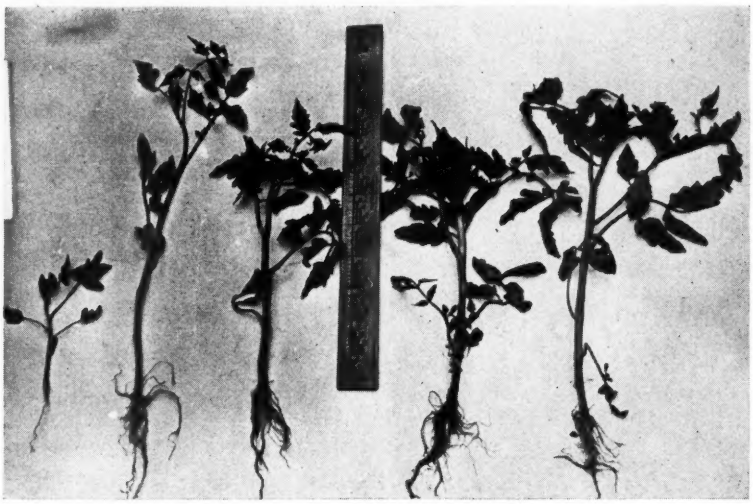
CHEMICAL ANALYSES OF SOUTHERN GROWN PLANTS

	Number Plants	Grams: Green Weight	Grams: Dry Weight	PPM (stems): NO_3 N	PPM (stems): P_2O_5	Dry Weight Basis, Per cent: N	P_2O_5	K_2O	CaO	Remarks
Mean Composition of Plants	12	100	10	245	372	2.11	0.92	4.62	2.13	45 variable samples
Mean Composition of Soft Plants	14	100	8	375	625	2.60	1.39	5.23	2.58	Tall, dark green, vegetative
Mean Composition of Hard Plants	9	100	10	15	202	1.92	0.78	4.15	2.25	Stocky, woody, yellowish plants
Mean Composition of Very Hard Plants	11	100	15	5	240	1.54	0.50	3.43	1.33	Woody, very yellow plants
Probable Satisfactory Composition	10	100	12	100	300	2.00	1.00	5.00	2.25	Stocky, woody, slightly yellow
Influence of Nutrients in Peat Moss on Hard Plants	12	100	11	0	80	1.68	0.88	4.00	2.11	No nutrients added
	12	100	10	325	270	1.94	1.04	7.73	5.06	5 lb. 8–24–8 in 50 gal. water

Because of the fact that it is necessary to have some free nitrogen and phosphorus in the plant for quick, rapid growth when set in the field, extremely hard plants in Georgia probably need nutrients added to the peat moss in shipment. The final figures in Table I represent hard plants mossed with and without nutrients. It is evident from these figures that more nitrate nitrogen and soluble phosphorus were present in the plants receiving nutrients in the moss. The nutrients were added by dissolving five pounds of 8–24–8 fertilizer in 50 gallons of water and soaking the peat moss in this solution.

The author has noted a distinct improvement in hard plants shipped with nutrients in the peat and no ill effect for soft plants. It is true that plants tend to put out new roots and take up more water where the nutrients are present. However, the degree of softness developed in such a short time can hardly be detrimental.

Because of the nature of the plant bed soils in Georgia, the figures in Table II are interesting. Note the low pH and low available nutrient content of the soils. For this reason the fertilization of the crop is of extreme importance. When any of the plant nutrients are left out of the fertilizer mixture, it is about equal to not planting the seed. Therefore, great emphasis must be put on the composition and analyses of the fertilizer mixture. This is being done and with more materials available a definite improvement should be noted.



1 2 3 4 5

Fig. 1. Typical plants showing: (1) Phosphorus deficient, (2) Nitrogen deficient, (3) Hard, but satisfactory, (4) Satisfactory plant—no deficiency, (5) Over-vegetative

TABLE II

CONDITION OF PLANT BED SOILS IN GEORGIA

Type	Condition	Cultivation	pH	Pounds per acre*					Per cent Organic Matter
				Ca	Mg	Al	P	K	
Malboro sandy loam	Virgin	Good	5.2	25	25	4.5	0.2	42	2.6
Malboro sandy loam	Virgin	Good	5.4	20	30	2.4	0.2	62	2.1
Malboro sandy loam	Virgin	Good	6.0	135	26	0.8	0.5	122	2.7
Tifton sandy loam	Old	Poor	5.4	100	33	2.0	1.2	113	2.8
Tifton sandy loam	Old	Good	5.7	80	23	3.2	0.5	42	2.0
Tifton sandy loam	Old	Good	5.4	75	20	2.0	0.1	12	1.2

* By sodium acetate extraction (short chemical test).

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Agriculture in 1946

It begins to look as if the possibilities of agriculture are going to be greater than the probabilities. If the nation could proceed with production in keeping with accumulated and current demands, prosperity would prevail and all would be well on the farm front. But getting down from the high horse of war and getting readjusted to the work stock of peace, are beset with many hitches. Labor wants to continue to ride high and refuses to ride at all if its pay check does not measure up to wartime levels. Already vast purchasing power has been erased by strikes, and the end is not in sight.

Take farm machinery. Production during the last quarter of 1945, a peacetime period, was 10 per cent less than it was for the last quarter of 1944, a war period. Difficulties of transition from war to peace, including lack of steel and castings, and the manpower problems are charged with the delay. This is an illustration of how far-reaching readjustments in vital industries can affect the welfare of people throughout the country.

Attempting to appraise the future, the United States Department of Agriculture set up crop and livestock goals for farmers in 1946. Predicated on the assumption that people will work and act sensibly, the agricultural goals set up appear to be reasonable.

On the one hand are those who want OPA out of the picture, claiming that its controls are hindering production. On the other hand are those who see a whirlwind of inflation and destruction if OPA does not continue to function as it has successfully done during the war, to check inflation, and they want it to continue functioning until supply and demand get back to normal.

Everybody wants to avoid inflation, and yet labor wants an increase in wages and those who have anything to sell want better prices; unrestrained, this means inflation. The question is, would it not be safer, if slower, to restrain the up-draft of spending and feed the markets just what they can safely consume and thus forestall the unhealthy bloat of an inflation?

The labor situation on the farm is no better. War prisoners are unavailable. Men who kept out of the draft by reason of their essential jobs on the farm are no longer bound to their jobs and have taken a vacation. Farm boys returning from the wars are seeking jobs in town. The fact is, farm labor is

shorter even than a year ago. So the probabilities of agriculture in 1946 are short of possibilities unless something occurs to stem the drift away from the farm and turns it back to the farm.

In view of this situation, and the fact that extreme war effort is no longer required, do not be surprised if farmers ease up in 1946 and plant fewer acres to crops.

Committee Planning Uniform Fertilizer Control Law

A uniform fertilizer control law is being considered by a committee of the Association of American Feed Control Officials which met recently in Washington. The committee is composed of D. S. Coltrane, Assistant Commissioner of Agriculture for North Carolina, chairman; Dr. D. M. Doty of the Indiana Agricultural Experiment Station, Lafayette, Ind.; Dr. W. B. Griem, state chemist, Madison, Wis.; Dr. L. E. Bopst, state chemist, College Park, Md.; Dr. J. M. Fudge, state chemist, College Station, Texas; George H. Marsh, state chemist, Montgomery, Ala.; Dr. John B. Smith, state chemist, Kingston, R. I.

Before preparing a model fertilizer bill to be recommended to all state legislatures, conferences will be held with other state officials and experiment station directors. The committee members were in agreement on one feature: a minimum of 20 per cent plant food should be the standard in all states.

It was also planned to organize an association of fertilizer control officials similar to the American Feed Control Officials Association and an organizing committee was appointed, of which Mr. Coltrane was named chairman.

Bemis Bag to Open Los Angeles Plant

To meet the greatly expanded needs for packaging in Southern California, the Bemis Bro. Bag Co. is increasing its production of cotton, burlap and open-mesh bags by opening a factory at Los Angeles.

A building just being vacated by the Consolidated Vultee Aircraft Corp. has been leased at 5401 East Slauson Avenue, Los Angeles. The building is 415 feet long and 145 feet wide and is ideal for bag manufacturing operations. A spur track is being built to permit direct unloading of supplies and shipment of finished products.

Bemis is one of the pioneer industrial concerns on the Pacific Coast, having started a factory at San Francisco in 1897. In 1904 another factory was opened at Seattle. In 1941, the Bemis operations were expanded by the addition of multiwall paper bag plants at Wilmington, California, and St. Helens, Oregon. With this new factory at Los Angeles, Bemis will have complete coverage of the Pacific Coast agricultural and industrial territory.

C. H. Dekker has been appointed manager of this new Bemis factory. He has been with the company for twenty-three years and in charge of the Bemis Sales Office at Los Angeles since 1939. Mr. Dekker's father was also a Bemis manager, having opened the factory at San Francisco in 1897.

The Bemis plant at Los Angeles will not only serve Southern California, but also Arizona and Nevada. The large number of bag users in this territory are thus assured of better service on Bemis bags than they have ever had before. It is expected that operations will commence early next year.

October Superphosphate

A distinct increase in superphosphate production was shown in the October figures of the U. S. Bureau of Census. Total production, figured on a basis of 18 per cent APA, came to 731,718 tons, an increase of 12.5 per cent over September, and of 21 per cent over October, 1944. This increase was entirely in the production of the normal 18 per cent grade, as both concentrated and base goods showed decreases. Shipments of normal and concentrated were greater than production, with the results that stocks on hand of these two grades were somewhat less than at the end of September.

Production	Normal 18% APA	Concentrated 45% APA	Base Goods 18% APA
October, 1945.....	689,024	15,806	3,179
September, 1945...	587,428	23,694	4,477
October, 1944.....	553,525	19,576	2,054
Shipments and Used in Reporting Plant			
October, 1945.....	711,938	17,332	1,375
September, 1945...	589,585	18,731	2,026
October, 1944.....	547,452	23,392	999
Stocks on Hand			
October 31, 1945...	813,739	30,067	9,112
September 30, 1945	827,856	31,593	7,308
October 31, 1944...	797,312	28,064	8,520

Recent Trends in Fertilizer Use in S. C.*

By DR. GILBEART H. COLLINGS

Professor of Soils, Clemson College, S. C., and Fertilizer Consultant, Collings and Associates

The conditions with which the fertilizer industry has to contend do not remain static. New or modified methods of mining or manufacture of fertilizer materials may often be reflected in changed procedures in crop fertilization. Likewise, shifts in crop rotation or crop emphasis by the farmer are always taking place, and these have to be taken into consideration by the manufacturer and dealer of commercial fertilizers. It is true, however, that most changes take place gradually rather than abruptly. These changes are referred to as trends by those of us who live with the problems of the industry. A close observer may not be sure just what the final outcome of a trend may be but he is often convinced that he knows the direction in which a trend is headed. One may distinguish between long time and short time trends and one often recognizes that it is the short and often abrupt trend that may bring grief to the fertilizer manufacturer or dealer.

Some of the long time trends within the industry that were in operation at the outbreak of World War II are still in operation today although they may have become greatly influenced during the war period by the state of flux the industry was thrown into by the war. Like all American industries the fertilizer industry has had to make tremendous adjustment to wartime conditions and many of the trends that appeared during these war years are no doubt temporary and may abruptly come to an end.

Suppose we briefly list in a few words the trends concerned with fertilizer use which have manifested themselves in South Carolina in recent years and which may be looked upon as basic rather than temporary.

More Lime Used

For a number of years now there has been a distinct trend toward the use of more and more lime and the state's annual consumption of lime in recent years has mounted rapidly. Back in 1937 the state's consumption of lime, expressed as effective lime oxide, amounted to only 28,409 tons. Last year, 1944–45, the state consumption of lime reached the all-time high in the neighborhood of half a million tons of limestone, an increase of about 900 per cent. This is a trend that should be encouraged by all concerned for South Carolina should and could profitably consume annually several times this tonnage. It is well to recall that this trend received its impetus from the work of the S. C. Agricultural Experiment Station and particularly from the results secured a few years ago from a study made by the Experiment Station during which over two million and a half samples of soils representing almost every field in the state were analyzed. These analyses showed that approximately 40 per cent of the agricultural soils of the state had

(Continued on page 24)

*A paper presented at the South Carolina Fertilizer Conference of the American Plant Food Council, November 8, 1945.

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FERTILIZER MATERIALS MARKET

NEW YORK

No Improvement in Supply Situation on Most Fertilizer Materials. Possibility of Further Drop in Sulphate of Ammonia Production. Labor Shortage and Transportation Difficulties Hampering Phosphate Rock and Potash Shipments.

Exclusive Correspondence to "The American Fertilizer"

NEW YORK, December 27, 1945.

Sulphate of Ammonia

There has been no improvement in the sulphate of ammonia situation. Production is still running behind demand and the possibility of a protracted steel strike is causing further apprehension for the new year. Shipments on existing contracts are running behind schedule and the generally tight situation continues.

Nitrate of Soda

Although the output of nitrate of soda in Chile is being increased, the demands from Europe are expected to cause a reduction in imports of this material by the United States. Stocks on hand, however, are adequate to meet all current demands. Due to the urging of agricultural officials for early buying, sales have been higher than is normal at this time of year.

Organic Materials

An increase in packing house by-product material is reported but it has not been great enough to affect the tight market. Feed producers are taking all materials available at ceiling prices and no surplus stocks exist.

Superphosphate

There has been no change in the superphosphate picture. Plants are running to the capacity permitted by a short labor supply and practically the entire output is going to fill contract orders.

Phosphate Rock

Phosphate miners are having difficulty in increasing output to take care of the greater demand from both domestic and export sources. Labor shortage has been a handicap and transportation difficulties have appeared in some localities. Most production is under contract for the balance of the season.

Potash

Production is proceeding at top levels but is almost all under contract for the balance of the fertilizer year. Shortage of box cars is hampering some scheduled shipments. It is expected that the year's output will be about the same as last.

CHARLESTON

Tight Situation Continues in Most Materials. Feed Producers Taking Almost All Organic Products.

Exclusive Correspondence to "The American Fertilizer"

CHARLESTON, December 24, 1945.

Organics.—This situation remains the same with an insistent demand and practically no material being offered.

Sulphate of Ammonia.—Deliveries on contracts still remain behind schedule.

Nitrate of Soda.—The supply of this is sufficient to meet the present demand.

Castor Pomace.—Though the arrival of castor beans has increased, shipments on contracts still are below the schedule.

Cottonseed Meal.—It seems impossible to secure practically any cottonseed meal. Even where there is a limited production of off-colored meal, it is being sold to feed dealers unless it is completely inedible.

CHICAGO

Labor Troubles Prevent Offering of Futures for Fertilizer Organics. Feed Material Supply Still Short.

Exclusive Correspondence to "The American Fertilizer"

CHICAGO, December 24, 1945.

Activity in the organic market remains at a standstill, owing to the complete lack of offerings. Labor troubles are again paramount in the situation, resulting in producers

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CUSTOM BUILT Raymond Shipping Sacks are printed or plain, made in a type, size, and strength to meet every requirement of the perfect fertilizer container.

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being unable to estimate their output even approximately accurate to warrant their offering future deliveries.

Notwithstanding the increased marketing of hogs, supplies for feed are still short of filling the demand. While hog receipts are expected to continue heavy the backlog demand for feed will absorb any improvement in supply.

Ceiling prices are:

High grade ground fertilizer tankage, $3.85 to $4.00 ($4.68 to $4.86 per unit N) and 10 cents; standard grades crushed feeding tankage, $5.53 per unit ammonia ($6.72 per unit N); blood, $5.53 ($6.72 per unit N); dry rendered tankage, $1.25 per unit of protein, f. o. b. producing points.

Fertilizer Nitrogen Figures

The war with its heavy demand for high crop yields for food and industrial purposes made the American farm a glutton for nitrogen. In the five years ending with 1940 the average annual consumption of commercial fertilizer nitrogen, according to a survey by the U. S. Department of Agriculture, was about 390,000 tons, and by 1944 it was up to 626,000 tons.

The states that fed their crops most heavily on this nitrogen were eight Atlantic and Gulf Coast States—Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana. The Department says this group used 59 per cent of it. The entire area west of the Mississippi used only 18 per cent, more than half of it going into California fields and orchards. All states showed a considerable increase.

Fertilizer specialists of the Department's Agricultural Research Administration figure that moderately favorable conditions in the post-war period will result in the use of 800,000 tons of fertilizer nitrogen a year and that prosperous farm conditions will result in the use of more than 1,000,000 tons.

Four materials now make up 90 per cent of the present big stream of nitrogen flowing to farms—sulphate of ammonium, 28 per cent; sodium nitrate, 26; ammoniating solutions, 18; and different forms of ammonium nitrate, 18. Use of the ammoniating solutions and ammonium nitrate has been on the increase in recent years, partly as a result of new techniques in preparing the latter so it will not cake in storage and will flow well from the distributors.

The fertilizer men report the United States now has a nitrogen-producing capacity of 1,510,000 tons, which is considerably greater than the farmer demands at present.

Need Improved Tools to Apply Fertilizer

Agronomists from Ohio State University and from other midwestern states meeting in Chicago during November asked fertilizer manufacturers to aid agricultural organizations in convincing farm implement manufacturers it is time to adapt fertilizer drills and attachments more closely to modern trends in power farming.

The principal changes suggested in equipment were greater hopper capacity, more accurate placement of fertilizer at high tractor speeds, and provision for applying larger amounts of fertilizer per acre. Many of the principles used for applying fertilizer mechanically are holdovers from the team and wagon days.

The university agronomists mention also that the use of fertilizer has been much more general than it was several years ago and the amounts applied per acre have increased considerably. Evidence of the trend is contained in the report of delivery of twice the

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usual amount of fertilizer in the midwest during the war period although problems of labor and transportation held down fertilizer output.

The agronomists asked manufacturers to follow state recommendations of analyses best suited for farm use in distributing the products. It was considered desirable to maintain the grades of fertilizer which have become established since wartime conditions stimulated the manufacture of grades which contain a high proportion of plant foods.

Ohio experts in plant production consider that 12 analyses of fertilizer would meet any requirements for crop production within the state. The 12 recommended are 0–16–8, 0–12–12, 0–10–10, 0–9–27, 3–12–12, 4–12–8, 3–9–18, 10–6–4, 5–10–10, 6–12–6, 3–16–9 and 8–8–8.

Middle Atlantic States Confer on Fertilizer Grades

Since many manufacturers who sell fertilizers in New Jersey also market their products in nearby states, the agricultural colleges of New York, Pennsylvania and New Jersey are working toward uniform fertilizer recommendations for these three states.

This was reported at a recent meeting in New Brunswick of dealers and manufacturers sponsored by the American Plant Food Council. Dr. Firman E. Bear, head of the soils department of the New Jersey College of Agriculture, Rutgers University, said that the three colleges will make their final recommendations well in advance of the next fertilizer season, which begins July 1, 1946.

Until that date, the New Jersey College of Agriculture recommended that the same grades offered last year be offered in that state, with the exception of the 3–9–15. The grades on the approved list for 1945–46 are 0–12–12, 0–14–7, 3–9–12, 3–12–6, 4–8–12, 4–12–4, 4–12–8, 5–10–5, 5–10–10, 7–7–7 and 10–6–4.

The New Jersey recommendations also permit the sale of more concentrated grades, if they contain plant food in the same ratios as those in the grades listed. For example, a manufacturer could sell a 6–12–6 in place of a 5–10–5 or an 0–14–14 instead of an 0–12–12 if he so desires.

Prairie Soils Respond to Fertilizers

Recent tests with wheat on prairie soil indicate that fertilizers are a profitable investment for such land, points out A. W. Klemme of the University of Missouri College of Agriculture.

In experiments with wheat in a wheat-lespedeza rotation where the seedbed was prepared with a field cultivator on a gray prairie soil at the Missouri Experiment Station at Columbia, the highest yields of wheat were obtained with complete fertilizers—those containing nitrogen, phosphorus, and potash. Of the fertilizer grades on the market, 4–12–4 gave the best response in increasing yields.

On the light colored prairie soils at the Missouri Experiment Station at Columbia, wheat yields following soybeans were approximately the same as where wheat followed oats. In this rotation, a profitable practice was the use of a phosphate-potash fertilizer. Over the four-year period 1941–1944 in a rotation of corn, oats, soybeans, wheat, the average yield of wheat was 11.6 bushels per acre. Where 200 pounds per acre of 20 per cent superphosphate were used, the average yield was 15.6 bushels per acre. Where a similar application of a 0–20–20 was applied, the average yield was 17.1 bushels per acre or 5.6 bushels over the untreated plots. Where limestone

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and superphosphate were used, the yield was approximately the same as where the phosphate-potash fertilizer alone was used. However, where limestone was applied and 200 pounds per acre of 0–20–20 were used, the average yield was 20.8 bushels or 8:9 bushels over the untreated plots. The cost of these extra bushels of wheat was less than fifty cents per bushel.

Soil Fertility Affects Composition of Corn

That soil fertility affects the chemical composition of corn has been shown by the results of a five-year study directed by Dr. D. M. Doty, Purdue University, department of agricultural chemistry.

"This is particularly true of the protein content of the corn," reports Dr. Doty. Corn grown on some very poor land near Lafayette was found to contain 9.9 per cent protein. A heavy application of nitrogen fertilizer to this same soil raised the protein content to 12.3 per cent.

Further studies showed that applications of phosphorus and potash to soils deficient in these elements increased the yield of corn but the potash content of the corn grain did not increase as a result of this treatment.

Furthermore, environmental factors, such as soil fertility and weather, were found to affect the composition of corn more than inheritance factors. The variation in protein between the same hybrid grown on different soils was greater than the variation between hybrid grown under the same conditions. This is true, Dr. Doty concludes, because in the past, corn breeding has not generally been done on the basis of chemical composition of the grain itself.

Sulphate of Ammonia Produced as By-Product in Alumina Production

Distribution, as fertilizer, of the surplus sulphate of ammonia of the alumina plant at Salem, Ore., is under the supervision of the Oregon State College Cooperative Agricultural Extension Service. Actual distribution of the material is handled for the college agency by E. F. Burlington and Sons, Forest Grove, Ore.

The authority got from the Reconstruction Finance Corporation by the State College service comprised such sulphate as might be produced at the alumina plant in excess of its tuning-up needs up to January 1 1946, the total not to exceed 2,500 tons. The service has made application for an extension of the period until March 1st and asks for the surplus that can be taken without in any way hindering the production of alumina, and provided that the commercial supply of sulphate of ammonia for Northwestern farmers does not become adequate prior to that date.

The plant at Salem is designed to produce alumina from clay. The chief reagent in the process is bisulphate of ammonia. This is produced in the plant by the regeneration of sulphate of ammonia in electric furnaces. It was because of inability to get the sulphate in the region that the plant was equipped to produce it from ammonia and sulphuric acid. Its evaporator-crystallizer capacity in that respect is much greater than the requirements of initial alumina operations.

The Chemical Construction Corporation, which built the Salem plant, will operate it until a production of fifty tons of alumina daily is attained. The Columbia Metals Corporation, Salem, has the operating contract to take over the plant when it has been accepted as complete at the capacity mentioned.

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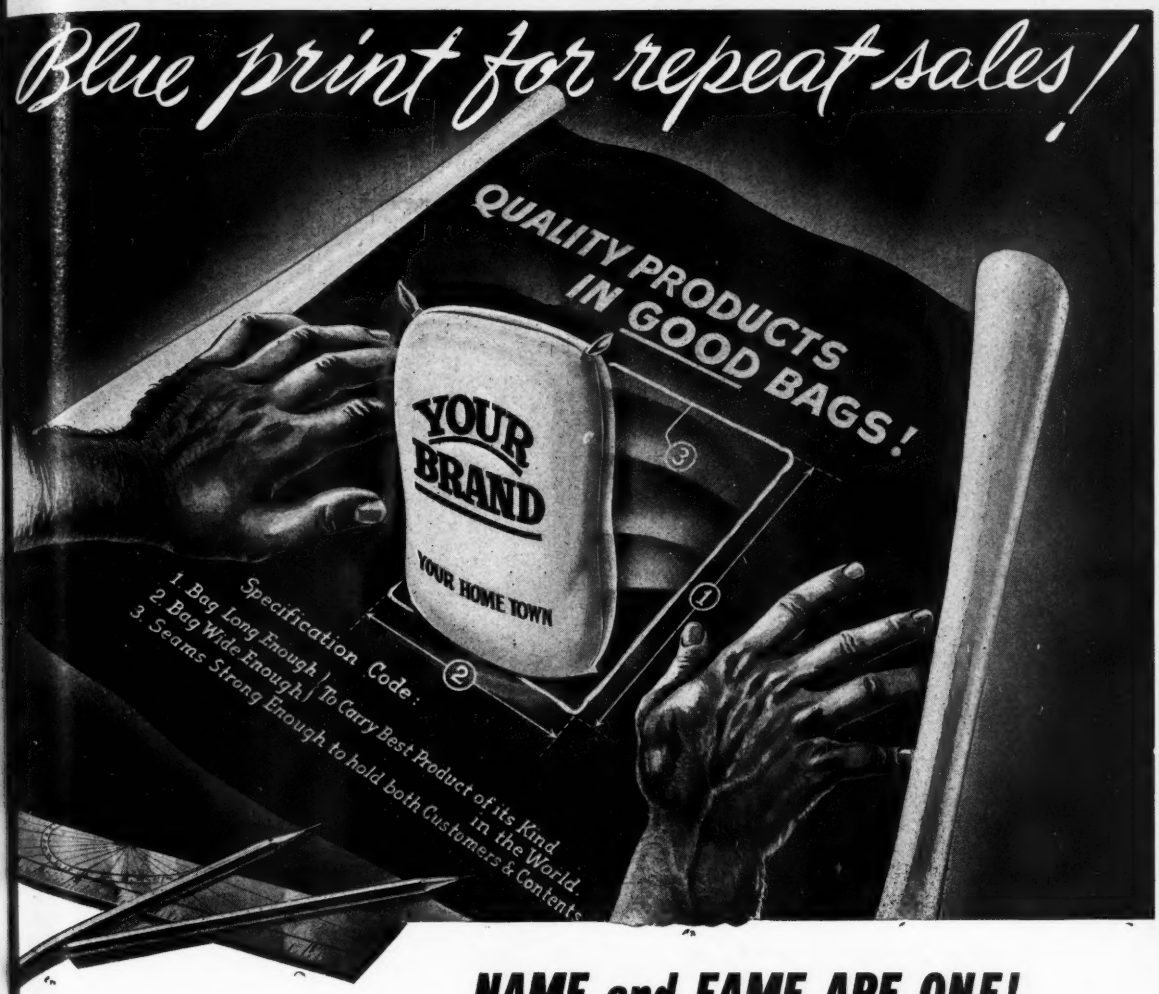
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NEW ORLEANS HOUSTON SAVANNAH

Wood Lignin as a Soil Amendment

The Northeastern Wood Utilization Council, New Haven, Connecticut, is making an earnest attempt to find a way to use wood lignin to supply soils with organic matter, especially the sandier types of soils. Much lignin goes to waste in paper mills.

Progress made in the several research projects is presented in bulletin No. 7 of the Council, under the title of *Wood Products for Fertilizer* now available at $1.00 per copy.

Authorities heard at a conference held at Orono, Maine, did not claim that lignin materials available at paper mills contain more than traces of plant food elements but that lignin value is mainly as a soil conditioner or as a contributor of organic or humus material which in turn promotes greater efficiency in the crop's use of applied fertilizers.

The possibility of using lignin as a carrier of soluble plant foods and for use in mixed fertilizers, is discussed. Successful ammoniation of lignin in Sweeden is referred to, but it was held by one authority that not as much organic matter as sandier soils require can be expected to be applied in connection with fertilizers.

Commercial lignin, it was brought out, differs with the pulping process used, also that lignin from pines differs from that of hardwood.

To the fertilizer industry the investigations are opening up the possibility of using lignin to provide organic materials in mixtures for such crops as experments have shown require organic matter, and also the possibility that fertilizers may be made more efficient when lignin carriers are used in mixtures.

Bemis Multiwall Bags Conquer Niagara Falls

On September 12, 1945, three Bemis multiwall paper shipping sacks of special heavy duty construction, each holding 50 pounds of flour, were placed in the river one half mile above Niagara Falls.

The bags were swept from the brink of the Falls, over which 222,000 cubic feet of water plunge each second, to the lower level 167 feet below. It was 11:00 a. m. when the test began. At 6:30 p. m., seven and one-half hours later, one bag was recovered under the Falls, intact and capable of being shipped as a commercial container.

Over a year ago Bemis bag specialists became interested in the possibilities of determining whether multiwall waterproof bags could stand the gaff of going over Niagara Falls. In the course of a year three tests were made. The bags survived this extreme test but could not be recovered because of the speed of the current.

It was decided to enlist the aid of the famous "Red" Hill who had on July 8, 1945, won a place among Niagara Falls immortals, by navigating the Rapids and Giant Whirlpool in a barrel, a feat his father before him had accomplished on three different occasions.

Hill was intrigued with the Bemis proposal. When he saw the multiwall paper bags readied for the test, however, he expressed serious doubt as to their ability to stand the abuse. In any event, he was persuaded to carry out the plan. Once the bags had fallen to the lower level, they were caught in the terrific undertow and sucked under the Falls. There they were pounded by tons of water which tossed the 50-pound bags about like bits of cork.

"Red" Hill made his way beneath the Falls into an area prohibited to the public.

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There on a rocky ledge he waited for an opportunity to recover the bags. Hour after hour passed as he patiently bided his time. The bags were tossed high, pounded below surface, caught in whirlpools, shot toward the ledge, and drawn away again at the moment it seemed most likely they would be recovered. Finally the swirling waters paused and Hill skillfully trapped one of the bags and drew it safely onto the ledge.

This newest chapter of all in the conquest of Niagara by a mere paper bag provides testimony of the extraordinary strength, durability and waterproofness which may be built into heavy duty multiwall paper shipping sacks by the craftsmanship and labor of Bemis workmen.

SPA Indicates Private Operation of Ordnance Ammonia Plants

The Surplus Property Administration has reported to Congress that present indications are that private industry plans to take over sufficient numbers of the government's synthetic ammonia war plants to "permit a reasonable expectation of meeting the Department of Agriculture program" for production of 250,000 tons of nitrogen a year over and above the output of the Tennessee Valley Authority.

The agency made the disclosure in a supplement, submitted December 20th, to the report on chemical plants and facilities made to the Senate and House last month. The supplement, covering the progress of disposal of the synthetic ammonia and alcohol plants, outlined in detail the status of each of the plants from the standpoint of their being operated by private industry for the benefit of agriculture.

Effect that the conclusions of the SPA might have on the Hill-Bankhead-Flannagan bill (S. 882) to put the government in the fertilizer business is problematical, but it can hardly be conceived as giving support to the need for this legislation. One of the motivating influences behind this legislation is the contention of experts that agriculture falls far short in using an amount of fertilizer that would be desirable from a soil conservation standpoint. The fact that private industry is indicating a willingness to seek a market for the nitrogen available from the war plants can be expected to cause members doubtful over the advisability of proceeding with the Hill-Bankhead-Flannagan bill to be even more doubtful.

The SPA told Congress that coordination of the disposal of ammonium nitrate graining facilities and nitric acid facilities in ammunition loading and explosive plants with the disposal of the separately situated synthetic ammonia plants currently "is being practiced to the extent that ammonium nitrate is being grained at a present rate of about 100,000 tons per year of nitrogen in five ammunition loading plants."

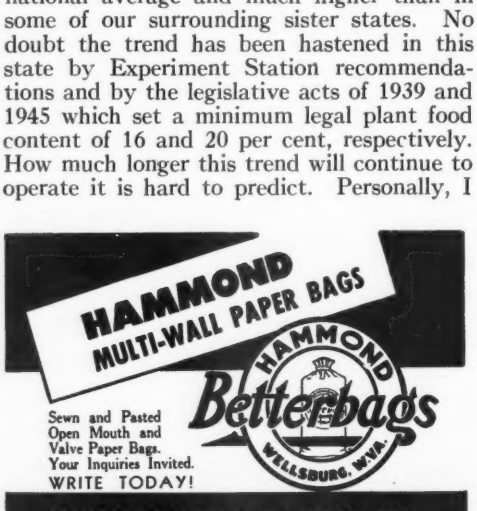
RECENT TRENDS IN FERTILIZER USE IN SOUTH CAROLINA

(Continued from page 14)

a pH of 5.5 or less and, largely because of this characteristic, were not capable of being farmed profitably. A continued increase in the consumption of lime is imperative and the present trend is a good omen.

Trend Toward Higher Analyses

For a long time now there has been a trend in this state toward the use of higher analysis grades and those of us who have been associated with the problems of the industry for a quarter of a century or longer have observed a more rapid acceleration in this trend in recent years. For the country as a whole, the plant food content of the average ton of complete mixed goods has increased since the outbreak of World War I about one-third but for South Carolina it has increased about one-half. In other words, the plant food content of our complete mixed goods is now about the same as the national average and much higher than in some of our surrounding sister states. No doubt the trend has been hastened in this state by Experiment Station recommendations and by the legislative acts of 1939 and 1945 which set a minimum legal plant food content of 16 and 20 per cent, respectively. How much longer this trend will continue to operate it is hard to predict. Personally, I



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Pierce, Fla.
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Wilmington, N. C.

feel that we have gone almost far enough as far as legal restrictions are justified although we all recognize that there are many farmers who could profitably use grades of much higher analyses.

Pasture Fertilization

Within the last few years there has developed a tremendous amount of interest in South Carolina in the fertilization of pastures. I think that the State Pasture Committee, which includes among its membership representatives of the State Extension Service, the State Experiment Station and the Soil Conservation Service, is largely responsible for this development. This trend has been a real surprise to many of us. Many farmers are now profitably applying lime or superphosphate or complete fertilizer or nitrates or all of these, who ten years ago would have considered this practice the height of folly. One farmer told me recently that he applied $50 worth of fertilizer per acre to his pasture during the first two years of his attempt to improve his pasture and he claimed it was a good paying proposition. I'll predict that this trend is going to become even more marked in South Carolina and I believe it would be advisable for all fertilizer organizations to make note of it.

Fertilizers on Grains

Another trend of recent origin has been the adoption by many farmers of the state of the practice of applying a complete fertilizer under small grain. At first many farmers tried out mixtures analyzing something like an 0-14-7 and then changed over to something like a 3-12-6 with such good results that they then increased their applications from 150 and 200 to 300 pounds per acre. Likewise, among these farmers there is a trend to increase the amount of nitrogen for top-dressing small grain. Many of you will recall that only a few years ago small grain was generally fertilized only with nitrogen in top-dressings and as far as phosphoric acid and potash were concerned the crop had to depend upon the fertilizer residues of previous cotton and tobacco fertilizations. A similar trend is also developing in the fertilization of peach orchards.

More Fertilizer on Corn

In the fertilization of corn the most marked fertilizer trends are the application of large amounts of complete fertilizer and the increased use of nitrogen. I believe the latter trend has developed largely as a result of a U. S. D. A. project that is now in operation being conducted jointly with the North and South Carolina Experiment Stations. Cooperative experiments with farmers have shown that farmers can profitably use much more nitrogen than they have been accustomed to employ, especially if when so doing they will increase the number of plants per acre. A number of farmers have noted the results of these cooperative experiments and as a result the trend of nitrogen consumption for corn is definitely up.

Cotton Fertilizers

The developing trends in cotton fertilization in South Carolina are many. Cotton farmers are now using grades of higher analysis than formerly and this is especially true of the content of potash. Then, for a number of reasons, there has developed a trend away from the use of organics. Again, increased amounts of nitrogen are being applied to cotton as side-dressings.

Of minor import at present, but nevertheless trends that will bear watching, are the adoption of the practices of defoliating cotton with cyanamid and the use of urea and cyanamid as herbicides and as sources of nitrogen in tobacco beds. After cyanamid dust has served the purpose of defoliating cotton, it then becomes a source of nitrogen to the succeeding crop. Although the tonnage used for this purpose in South Carolina has so far been small, the practice could develop into one of some consideration in crop fertilization.

There are other minor trends that I might mention but the above are sufficient to show that changes in fertilizer use bring about changes in farmer demand and that the fertilizer industry must at all times be cognizant of this fact.

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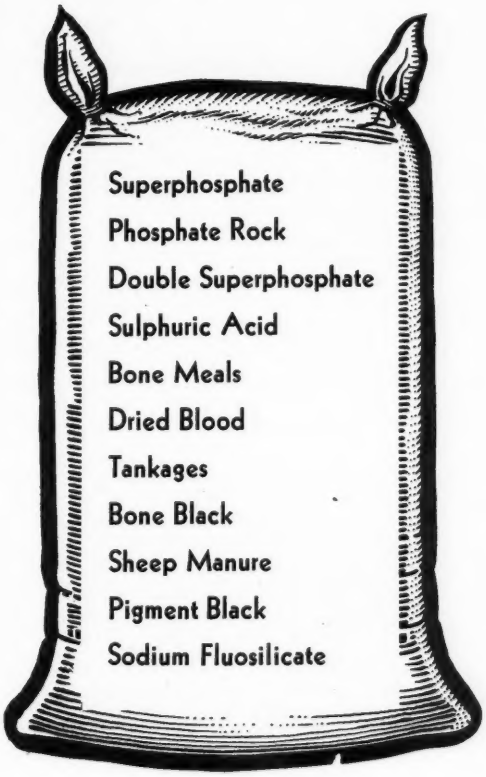

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USING PUBLIC RELATIONS FOR LEADERSHIP

(Continued from page 9)

sibly quote the kind of law which was *not* passed as a result of such campaigns.

But from all of them I draw one principle that is useful to remember. It has to do with my earlier statement that it is always difficult to defend a *status quo*. It is also based on a principle familiar to every soldier: agression is the best defense. Here it is: *When any business or industry is about to come under organized attack, it should make some shift in its ground, if at all possible.* Instead of merely defending old policy, it should re-examine that policy and if necessary modify it more in line with public interest—if that can be done without sacrifice of principle. Then it can go on and continue aggressively to show the benefits of this to the public. The campaign of persuasion conducted on these lines has most chance of success.

Handling Today's Conflicts

Those of us who follow public affairs—and every business man's life is intimately affected by them—know we are in an age of enormous conflict. During the war we declared a kind of armistice on our own domestic quarrels and strife. Now the home-front armistice is ended.

This is one reason why the subject of public relations seems today of such importance, and interests even business men who once regarded it as academic, or thought of it vaguely as a device for promoting their products in so-called free newspaper space.

Business leadership, which conducted itself so magnificently during the war, is already under attack again. It is even being dared to function adequately—as in the left wing demand that it make 60 million jobs, under pain of confessing inability to serve the nation properly.

In pre-war days the politicians led most of the attacks, finding in this course the road to votes and to power.

Undoubtedly, many business men, in facing the present struggle for power, think it enough to give the public the facts, and the public will decide aright. They are sometimes encouraged in this by publicity men, who know how to write a factual piece for the press, but may know little enough about public relations as a profession.

The truth is that run-of-the-mine facts are meaningless to anyone, until interpreted in terms of self-interest. The universe is literally full of millions of facts; but only a relative few interest you and me. Successful persuasion requires us to select and interpret the facts about a subject in a timely way that gives them intimate, personal meaning for our chosen audience. Effective public relations work must present not only facts, but timely facts persuasively organized to prove we are doing a vital, useful and creative job for the whole community.

All of us here will be facing such public relations problems frequently in coming years. Here is one tip in procedure: Try to understand what the majority really want. Then choose only to oppose short-sighted methods of getting the agreed-on Good. Make a point of suggesting fairer and more workable means of achieving the same end. That is the essence of successful leadership, and of using public relations techniques effectively to enlarge your own influence.

This technique has won labor battles, political conflicts, and campaigns for legislation. It has unfortunately been used more often by politicians than by industry. If business men followed it more frequently, with a due sense of proper timing and a modicum of eloquence, their leadership in the American nation would not be so readily challenged by some of the upstarts in the public forum.

If we apply some of these observations to the work of the National Fertilizer Association, what do we conclude?

First, that the legislation it is now combating will—even if presently defeated—be doubtless proposed again. For we live in a time when somebody is perennially ready to suggest that Government can improve lots of lives by entering business. Your own public relations campaign, like that of every business group, must therefore be a perpetual one.

Second, when you are in doubt about the trend of events, why not avail yourselves

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Agricultural authorities have shown that a lack of Boron in the soil can result in deficiency diseases which seriously impair the yield and quality of crops.

When Boron deficiencies are found, follow the recommendations of local County Agents or State Experiment Stations.

Information and references available on request.

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Pioneer Producers of Muriate of Potash in America

See Page 4

now of such a help as the public opinion poll? Even at the present moment such a poll of typical farmer opinion on proposed legislation might be useful to you. If such a poll shows the farmers don't want this legislation, its results give you the very best ammunition in the world to shoot against the sponsors of the bill. If by some chance you did find farmers had been led by the promise of handouts to want the things these measures offer, you would have reliable data for revising your strategy, and intensifying your campaign.

My friend Ed Murrow has a favorite story about a hard-bitten gunner in a Liberator during the war. As the great machine rocked in the flak over Berlin, the gunner announced over the intercom., "For them that know how to pray, now is the time to perform." Those who think they know something about public relations are being faced now with a very similar challenge.

America has escaped the physical destruction the war imposed on all other great nations of the world. But our people have not escaped the destruction of many norms and relationships that make for national balance. Strange as it may seem to some of us, there are millions of unhappy people right here at home today, no less than in the ruins of Europe.

Many of these people are confused and uncertain. They are looking for panaceas of any kind that promise an easy answer to the problems that harass them. They will be hungry for guidance. They will be easy prey for men who have few ideals but know the art of manipulating the crowd to secure money and power.

That is why leadership of vision is going to be needed in this country as never before. Unfortunately, it is one thing to have vision; it is another to practice public relations so effectively that the millions are persuaded to adopt the vision, and act upon it.

No ideals, however noble, can be effective in history unless someone develops the power to *make* them effective.

Our generation has seen extraordinary things. Many of them would have seemed impossible, if they had been predicted to us only a few years ago. We were ill prepared for them. We may not be too well prepared for the future that lies immediately ahead of us.

But the experience of recent years has served at least one purpose: to show responsible business men how great is their responsibility in giving the American nation leadership in preserving the American way of life. To accomplish this, they need every aid that the practice of effective public relations can devise.

Added Fertilizer Increases Income from Corn

Thad Carlton is a good example of North Carolina farmers, who are finding that corn production is highly profitable when large yields are obtained through the use of hybrid seed and extra fertilization, particularly nitrogen.

This Yadkin County farmer reduced the cost of corn production from 87 cents a bushel to 57 cents, while at the same time he increased his net profits by more than four times, not counting land rent as an item of expense.

With 500 pounds of 3–12–6 fertilizer, his local variety of corn, and about 4,000 plants per acre, he produced 40 bushels of corn per acre at an expense of $35. With 500 pounds of 3–12–6, 10,000 plants of Tenn-10, and 850 pounds of nitrate of soda, he made 115 bushels of corn per acre at an expense of $66.

Carlton figured his profit, not counting land rent, at $25 an acre with his local corn and $106 an acre with the extra fertilizer and the Tenn-10 hybrid, according to County Agent D. R. Perkins of the State College Extension Service.

Perkins points out that it requires about 7 to 8 times as many man-hours of labor to produce an acre of tobacco as an acre of corn on the average and that there is real money in corn where large yields are produced at a reasonable cost.

He also points out that with improved methods of producing corn, the grain requirements of the average farm can be produced on far less acres than at present.

—*North Carolina Extension Service.*

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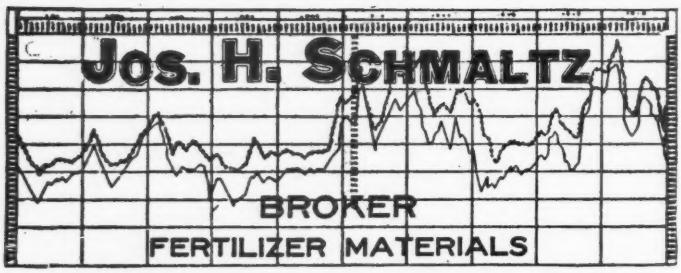

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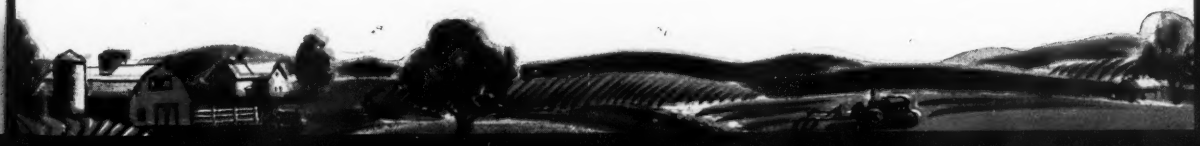

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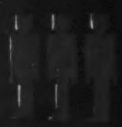

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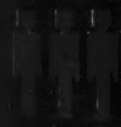

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